while those of *B. alba* are bent upward until mature. I enclose samples from the stock and blood-leaved shoot to illustrate this distinction.—THOS. MEEHAN.

NOTES FROM COLORADO.—The lateral canons of the Arkansas Canon between Canon City and Spike Buck Canon, have generally no running water in them. Where they come down into the main canon is a mass of boulders, rocks and sand spreading fan-like in all directions. This "wash" at the mouths of the canons, three to five hundred feet from the river, is from ten to eighty feet deep. Upon these "washes" bushy trees of *Juniperus occidentalis* that are more than a hundred years old often grow, and *Opuntia arborescens* as much older than twenty as years it has missed forming a new joint, with old bushes of *Bigelovia* and many other species of shrubby plants. Two dead trees of *Pinus ponderosa*, one large and one medium size apparently grew upon one of these washes, but a railway cut uncovering their buried trunks showed that since they had attained their present size, a "water spout" bringing rocks and sand down from the mountains, had formed a new surface about the trees fifteen feet above the old one Along the base of the mountains on the plains it is not uncommon to find old cottonwood stumps, rotted away, leaving a hole eight or ten feet deep down into the soil which has been washed about them, but the pines, growing in rocky localities can not often be subjected to such catastrophes.—T. S. BRANDEGEE.

REGULAR FLOWER IN PEDICULARIS CANADENSIS.—On May 2d, 1877, I collected near this place a specimen of this plant, which I have carefully preserved in the Herbarium of Purdue University, having a strictly regular flower growing from the apex of one of the spicate racemes. The position of the flower as well as the perfect regularity of the corolla, attracted my attention and I carefully preserved it and in a note pinned upon the sheet on which it was fastened is the following description which I copy:

The flower is salver form in shape, the tube spreading abruptly above, with a regular border of six lobes each a full line in length. The lobes turn back and face outward, the edges being rolled for two thirds of the length of the lobes, giving them the appearance of being acute. At each sinus between the corolla lobes and just within the border, was a gibbous protuberance whose blunt point extended a very little beyond the base of the sinus. The calyx was somewhat irregularly four-lobed, one lobe having a tooth in its margin. The calyx was also split down further on one side than on the other, and

was about one-half the length of the tube of the corolla. The stamens were four exserted, on slender filaments, erect and about equalling the pistil. The corolla was twisted from the base to the border to the extent of about one-fourth of the circumference.—JOHN HUSSEY, *Purdue University, La Fayette, Ind.*

THE HAIRS OF LYCHNIS GITHAGO, Lam.—While applying poison (a solution of corrosive sublimate in alcohol) to some herbarium specimens a few days ago, the long soft hairs of the Corn Cockle attracted my attention, and thinking perhaps they would make an interesting study under the microscope, I laid a few aside until I should have leisure to prepare and mount them. Almost every one is familiar with the general appearance of our common *Lychnis*, but perhaps few have noticed particularly the delicate white hairs with which it is clothed. Let me describe them, though what I wish to notice especially, concerns not so much the form of the hair as its movements. The whole plant is covered with these silky, appressed hairs, varying from 2 to 4 lines in length. At the base under the microscope is seen a group of small cells from which the hair tapers to a fine point. It is composed of from three to five cells, which become more attenuated in proportion as they lie nearer the outer extremity, the longest being about 8-hundredths of an inch. The whole hair seems to be somewhat flattened, occasioned probably by drying. When preparing these hairs for mounting, I first placed them in a watch-glass containing strong alcohol. In a few seconds the three commenced swimming about, revolving, rising and falling, continuing the motion as long as they remained in the alcohol. Upon being placed in turpentine the movements ceased.

The question naturally arises, what caused these movements? As was remarked, the hairs of *Lychnis* are somewhat flattened, and when dry are slightly twisted spirally. Upon examining them in the glass of alcohol with a small hand magnifier they were seen to be very much twisted but no motion except the general one could be made out. Taking them from the glass and placing them upon a slide in a drop of alcohol, under a power of 60 diameters, the reason of the swimming could readily be detected. The hairs were twisting and untwisting with considerable rapidity, jerking out of the field and bending upward as though alive. These movements continued for some moments after the drop of liquid had evaporated. The reason of these contortions can not so clearly be made out. It is probably due to the unequal endosmotic action of the cell walls, inasmuch as